

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN THE APPLICATION OF:  
E. I. DUPONT DE NEMOURS AND COMPANY      CASE NO.: BB1252 US NA1

APPLICATION NO.: UNKNOWN      GROUP ART UNIT: UNKNOWN

FILED: CONCURRENTLY HEREWITH      EXAMINER: UNKNOWN

FOR: **DISEASE RESISTANCE FACTORS**

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

**DECLARATION IN ACCORDANCE WITH 37 CFR 1.821**

I hereby state that the content of the paper and computer readable copies of the Sequence Listing, submitted in accordance with 37 CFR 1.821(c) and (e), respectively are the same.

Respectfully submitted,



KENING LI  
ATTORNEY FOR APPLICANTS  
REGISTRATION NO. 44,872  
TELEPHONE: 302-992-3749  
FACSIMILE: 302-892-1026

Dated: 04 May 2001

SEQUENCE LISTING

<110> E. I. du Pont de Nemours and Company  
<111> Butler, Karla  
    Falk, Carl  
    Famodu, Omolayo O.  
    Fang, Yiwen  
    Han, Feng  
    Heppard, Elmer  
    Liu, Zhan-Bin  
    Miao, Gou-Hai  
    Orell, Sean  
    Pitkäniemi, Antti

<120> Disease Resistance Factors

<130> BB1252 US NAI

<140>

<141>

<150> 60/107,242

<151> 1998-11-05

<150> US92,45,953

<151> 1999-10-04

<120> Disease Resistance Factors

<160> 17

<170> Microsoft Office 97

<210> 1  
<211> 520  
<212> DNA  
<213> Zea mays

<220>

<221> unsure

<222> (405)..(406)

<220>

<221> unsure

<222> (411)

<220>

<221> unsure

<222> (417)

<220>

<221> unsure

<222> (492)

<220>

<221> unsure

<222> (503)

1921-22

42111-2  
42111-59  
42112-PBT  
42113-Zea mays

```

<4> 1 2
Val Arg Arg Met Arg Arg Ala Leu Asp Ala Ala Asp Ile Glu Leu Val
      5           10           15
      :
Lys Leu Met Val Met Gly Glu Gly Leu Asp Leu Asp Ala Ala Leu Ala
      20           25           30
Val His Tyr Ala Val Gln His Cys Gly Arg Asp Val Val Lys Ala Leu
      35           40           45
Leu Glu Leu Gly Ala Ala Asp Val Asp Ser Arg
      50           55

```

• 211 : 3  
• 211 : 518  
• 211 : DNA  
• 212 : *Oryza sativa*

· 118 ·  
· 119 · unsure  
· 120 · (424)

221 unsure  
221 (441)

111 unsure  
111 (488)

11111 unsure  
11111 (509)

4221 - unsure  
4222 - 1517

<210> 4  
<211> 84  
<212> PRT  
<213> *Oryza sativa*

<400> 4  
 Asp Ala Phe Leu Ser Leu Leu Gly Tyr Leu Tyr Thr Gly Lys Leu Arg  
 1 5 10 15  
 Prt Ala Pro Asp Asp Val Val Ser Cys Ala Asp Pro Met Cys Pro His  
 20 25 30  
 Asp Ser Cys Pro Pro Ala Ile Arg Phe Asn Val Glu Gln Met Tyr Ala  
 35 40 45  
 Ala Trp Ala Phe Lys Ile Thr Glu Leu Ile Ser Leu Phe Gln Arg Arg  
 50 55 60  
 Leu Leu Asn Phe Val Asp Lys Thr Leu Val Glu Asp Val Leu Pro Ile  
 65 70 75 80  
 Leu Gln Val Ala

• 110-5  
• 111-642  
• 112-DNA  
• 113- *Triticum aestivum*

..26 ..  
7.21 unsure  
7.25 (26)

121  
121 - unsure  
121 (321)

• 120 •  
• 121 • unsure  
• 122 • (335)

- 20 -

→ unsur

1268 (403)

1171531386

1128 (4468)

ANSWER

UNSURE

111.00  
111.00 unsure  
111.00 111.00

11-11-1968  
11-11-1968 - UNK  
11-11-1968 (508)

• 111 • unsure  
• 111 • (510)

111 unsure  
(563)

1.1. unsure  
1.1. (565)

• 220 •  
• 221 • unsure  
• 222 • (533)

220  
1.1 unsure  
(609)

111 unsure

• 230 •

1222 (619)

• 21:10

. 211 . 65

## 7.1.1.2. EBT

<221>  
<221> UNSURE  
<222> 13.

<400> 6  
 Gin Gly Gin Glu Ser Asn Lys Asp Lys Met Cys Ile Asp Ile Leu Glu  
 1 5 10 15  
 Ar; His Met Met Arg Asn Pro Met Thr Ala Glu Asp Ser Val Thr Ser  
 20 25 30  
 Pro Leu Leu Ala Asp Asp Leu His Met Lys Leu Ser Tyr Leu Glu Asn  
 35 40 45  
 Arg Val Ala Phe Ala Arg Leu Phe Phe Pro Ala Glu  
 50 55 60

42108 7  
42110 1227  
42120 ENA  
42131 Zea mays

42100-8  
42111-325  
42120-FRT  
42130-Zea mays

<401> 8  
 Pro Val His Glu Lys Arg Val Arg Arg Ile His Arg Ala Leu Asp Ser  
 1 5 10 15

Leu Asp Asp Ala Asp Ala Leu His Tyr Ala Ala Ser Tyr Cys Asp Pro  
 41 47  
 Lys Val Val Ser Pro Leu Leu Asp Leu Ala Met Ala Asn Leu Asp Leu  
 51 57  
 Lys Asn Ser Arg Gly Tyr Thr Ala Leu His Leu Ala Ala Met Arg Arg  
 65 75 80  
 Glu Pro Ala Ile Ile Met Cys Leu Leu Asn Lys Gly Ala Asn Val Ser  
 85 90 95  
 Gln Leu Thr Ala Asp Gly Arg Ser Ala Ile Gly Ile Cys Arg Arg Leu  
 110 115 120 125  
 Thr Arg Ala Lys Asp Tyr Asn Thr Lys Met Glu Gln Gly Gln Glu Ser  
 115 120 125  
 Asn Lys Asp Arg Leu Cys Ile Asp Ile Leu Glu Arg Glu Met Met Arg  
 130 135 140  
 Asn Pro Met Ala Val Glu Asp Ala Val Thr Ser Pro Leu Leu Ala Asp  
 145 150 155 160  
 Asp Leu His Met Lys Leu Leu Tyr Leu Glu Asn Arg Val Ala Phe Ala  
 165 170 175  
 Arg Leu Phe Phe Pro Ala Glu Ala Lys Val Ala Met Gln Ile Ala Gln  
 180 185 190  
 Ala Asp Thr Thr Glu Glu Phe Gly Gly Ile Val Ala Val Ala Ala Ser  
 195 200 205  
 Thr Ser Gly Leu Arg Glu Val Asp Leu Asn Glu Thr Pro Val Thr  
 210 215 220  
 Gln Asn Lys Arg Leu Arg Ser Arg Val Asp Ala Leu Met Lys Thr Val  
 225 230 235 240  
 Glu Leu Gly Arg Arg Tyr Phe Pro Asn Cys Ser Gln Val Leu Asp Lys  
 245 250 255  
 Phe Leu Glu Asp Asp Leu Pro Glu Gly Leu Asp Gln Phe Tyr Leu Gln  
 260 265 270  
 Arg Gly Thr Ala Asp Glu Gln Lys Val Lys Arg Met Arg Phe Cys Glu  
 275 280 285  
 Leu Lys Glu Asp Val Leu Lys Ala Phe Ser Lys Asp Lys Ala Glu Gly  
 290 295 300  
 Ser Val Phe Ser Gly Leu Ser Ser Ser Ser Ser Cys Ser Pro Pro Gln  
 305 310 315 320  
 Lys Tyr Ala Gln Arg  
 325

- 210 - 3  
 - 211 - 2164

卷之三

#### REFERENCES

- 210 - 10

277: 1002

112 (R)

4213 · *Oryza sativa*

400 + 10

Met Giu P

1

Gly Gly Gly Gly Gly Asp Ile Leu Val His Arg Cys Val Leu Ser Ala  
 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160  
 Arg Ser Pro Phe Ile Arg Gly Val Phe Ala Arg Arg Ala Ala Ala  
 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685 690 695 700 705 710 715 720 725 730 735 740 745 750 755 760 765 770 775 780 785 790 795 800 805 810 815 820 825 830 835 840 845 850 855 860 865 870 875 880 885 890 895 900 905 910 915 920 925 930 935 940 945 950 955 960 965 970 975 980 985 990 995 1000

Val Thr Glu Glu Gly Lys Pro Ser Pro Lys Asp Arg Leu Cys Ile Glu  
 385 390 395 400 405 410 415 420 425 430 435 440 445  
 Ile Leu Glu Glu Ala Glu Arg Arg Asp Pro Glu Leu Gly Glu Ala Ser  
 405 410 415 420 425 430 435 440 445  
 Val Ser Leu Ala Met Ala Gly Glu Ser Leu Arg Gly Arg Leu Leu Tyr  
 420 425 430 435 440 445  
 Leu Glu Asn Arg Val Ala Leu Ala Arg Ile Met Phe Pro Met Glu Ala  
 435 440 445 450 455 460 465 470 475 480 485 490 495  
 Arg Val Ala Met Asp Ile Ala Glu Val Asp Gly Thr Leu Glu Phe Asn  
 450 455 460 465 470 475 480 485 490 495 500 505 510  
 Leu Gly Ser Gly Ala Asn Pro Pro Pro Glu Arg Gin Arg Thr Thr Val  
 465 470 475 480 485 490 495 500 505 510 515 520 525  
 Asp Leu Asn Glu Ser Pro Phe Ile Met Lys Glu Glu His Leu Ala Arg  
 485 490 495 500 505 510 515 520 525 530 535 540 545  
 Met Thr Ala Leu Ser Lys Thr Val Glu Leu Gly Lys Arg Phe Phe Pro  
 500 505 510 515 520 525 530 535 540 545 550 555 560  
 Arg Cys Ser Asn Val Leu Asp Lys Ile Met Asp Asp Glu Thr Asp Pro  
 515 520 525 530 535 540 545 550 555 560 565 570 575  
 Val Ser Leu Gly Arg Asp Thr Ser Ala Glu Lys Arg Lys Arg Phe His  
 530 535 540 545 550 555 560 565 570 575 580 585 590  
 Asp Leu Gin Asp Val Leu Glu Lys Ala Phe His Glu Asp Lys Glu Glu  
 545 550 555 560 565 570 575 580 585 590 595 600 605  
 Asn Asp Arg Ser Gly Leu Ser Ser Ser Ser Ser Thr Ser Ile Gly  
 565 570 575 580 585 590 595 600 605 610 615 620 625  
 Ala Ile Arg Pro Arg Arg  
 580 585 590 595 600 605 610 615 620 625 630 635 640  
 645 650 655 660 665 670 675 680 685 690 695 700 705 710  
 715 720 725 730 735 740 745 750 755 760 765 770 775 780  
 785 790 795 800 805 810 815 820 825 830 835 840 845 850  
 855 860 865 870 875 880 885 890 895 900 905 910 915 920  
 925 930 935 940 945 950 955 960 965 970 975 980 985 990  
 995 1000 1005 1010 1015 1020 1025 1030 1035 1040 1045 1050 1055 1060  
 1065 1070 1075 1080 1085 1090 1095 1100 1105 1110 1115 1120 1125 1130  
 1135 1140 1145 1150 1155 1160 1165 1170 1175 1180 1185 1190 1195 1200  
 1205 1210 1215 1220 1225 1230 1235 1240 1245 1250 1255 1260 1265 1270  
 1275 1280 1285 1290 1295 1300 1305 1310 1315 1320 1325 1330 1335 1340  
 1345 1350 1355 1360 1365 1370 1375 1380 1385 1390 1395 1400 1405 1410  
 1415 1420 1425 1430 1435 1440 1445 1450 1455 1460 1465 1470 1475 1480  
 1485 1490 1495 1500 1505 1510 1515 1520 1525 1530 1535 1540 1545 1550  
 1555 1560 1565 1570 1575 1580 1585 1590 1595 1600 1605 1610 1615 1620  
 1625 1630 1635 1640 1645 1650 1655 1660 1665 1670 1675 1680 1685 1690  
 1695 1700 1705 1710 1715 1720 1725 1730 1735 1740 1745 1750 1755 1760  
 1765 1770 1775 1780 1785 1790 1795 1800 1805 1810 1815 1820 1825 1830  
 1835 1840 1845 1850 1855 1860 1865 1870 1875 1880 1885 1890 1895 1900  
 1905 1910 1915 1920 1925 1930 1935 1940 1945 1950 1955 1960 1965 1970  
 1975 1980 1985 1990 1995 2000 2005 2010 2015 2020 2025 2030 2035 2040  
 2045 2050 2055 2060 2065 2070 2075 2080 2085 2090 2095 2100 2105 2110  
 2115 2120 2125 2130 2135 2140 2145 2150 2155 2160 2165 2170 2175 2180  
 2185 2190 2195 2200 2205 2210 2215 2220 2225 2230 2235 2240 2245 2250  
 2255 2260 2265 2270 2275 2280 2285 2290 2295 2300 2305 2310 2315 2320  
 2325 2330 2335 2340 2345 2350 2355 2360 2365 2370 2375 2380 2385 2390  
 2395 2400 2405 2410 2415 2420 2425 2430 2435 2440 2445 2450 2455 2460  
 2465 2470 2475 2480 2485 2490 2495 2500 2505 2510 2515 2520 2525 2530  
 2535 2540 2545 2550 2555 2560 2565 2570 2575 2580 2585 2590 2595 2600  
 2605 2610 2615 2620 2625 2630 2635 2640 2645 2650 2655 2660 2665 2670  
 2675 2680 2685 2690 2695 2700 2705 2710 2715 2720 2725 2730 2735 2740  
 2745 2750 2755 2760 2765 2770 2775 2780 2785 2790 2795 2800 2805 2810  
 2815 2820 2825 2830 2835 2840 2845 2850 2855 2860 2865 2870 2875 2880  
 2885 2890 2895 2900 2905 2910 2915 2920 2925 2930 2935 2940 2945 2950  
 2955 2960 2965 2970 2975 2980 2985 2990 2995 3000 3005 3010 3015 3020  
 3025 3030 3035 3040 3045 3050 3055 3060 3065 3070 3075 3080 3085 3090  
 3095 3100 3105 3110 3115 3120 3125 3130 3135 3140 3145 3150 3155 3160  
 3165 3170 3175 3180 3185 3190 3195 3200 3205 3210 3215 3220 3225 3230  
 3235 3240 3245 3250 3255 3260 3265 3270 3275 3280 3285 3290 3295 3300  
 3305 3310 3315 3320 3325 3330 3335 3340 3345 3350 3355 3360 3365 3370  
 3375 3380 3385 3390 3395 3400 3405 3410 3415 3420 3425 3430 3435 3440  
 3445 3450 3455 3460 3465 3470 3475 3480 3485 3490 3495 3500 3505 3510  
 3515 3520 3525 3530 3535 3540 3545 3550 3555 3560 3565 3570 3575 3580  
 3585 3590 3595 3600 3605 3610 3615 3620 3625 3630 3635 3640 3645 3650  
 3655 3660 3665 3670 3675 3680 3685 3690 3695 3700 3705 3710 3715 3720  
 3725 3730 3735 3740 3745 3750 3755 3760 3765 3770 3775 3780 3785 3790  
 3795 3800 3805 3810 3815 3820 3825 3830 3835 3840 3845 3850 3855 3860  
 3865 3870 3875 3880 3885 3890 3895 3900 3905 3910 3915 3920 3925 3930  
 3935 3940 3945 3950 3955 3960 3965 3970 3975 3980 3985 3990 3995 4000

(210) 12

(211) 455

1212 · 1221

<213 · *Cryza sativa*

<400> 12

Asp Ala Phe Leu Ser Leu Leu Gly Tyr Leu Tyr Thr Ser Tyr 15  
1 5 10 15

Asp Ser Cys Pro Pro Ala Ile Arg Phe Asn Val Glu Gln Met Tyr Ala  
35 40 45

Ala Trp Ala Phe Lys Ile Thr Glu Leu Ile Ser Leu Phe Gln Arg Arg  
50 55 60

Leu Leu Asn Phe Val Asp Lys Thr Leu Val Glu Asp Val Leu Pro Ile  
65 70 75 80

Leu Gln Val Ala Phe His Ser Glu Leu Thr Pro Val Leu Glu Lys Cys  
85 90 95

Ile Arg Arg Ile Ala Arg Ser Asn Leu Asp Asn Val Ser Leu Asp Lys  
 100 105 110

Glu Leu Pro Pro Glu Val Ala Val Gln Ile Lys Glu Ile Arg Gln Lys  
 113 120 125

Ser Gln Pro Asn Glu Gly Asp Thr Val Ile Ser Asp Pro Val His Glu  
 132 133 134 135 136 137 138 139 140

Lys Arg Val Arg Arg Ile His Arg Ala Leu Asp Ser Asp Asp Val Glu  
 315 150 155 160

Leu Val Lys Ile Leu Leu Asn Val Val Val Ile Ile Tyr Leu Asp Asp Ala  
 165 170 175 180 185 190 195  
 Asn Ala Leu His Tyr Ala Ala Ala Tyr Lys Asp Ser Lys Val Val Ser  
 185 190 195  
 Glu Leu Leu Asp Leu Arg Leu Ala Asn Leu Asn Leu Lys Asn Ser Arg  
 195 200 205  
 Gly Tyr Thr Ala Leu His Leu Ala Ala Met Arg Arg Glu Pro Ala Ile  
 210 215 220  
 Ile Met Cys Leu Leu Asn Lys Gly Ala Ala Val Ser Gln Leu Thr Ala  
 225 230 235 240  
 Asp Gly Gln Ser Ala Met Ser Ile Cys Arg Arg Leu Thr Arg Met Lys  
 245 250 255  
 Asp Tyr Asn Thr Lys Met Glu Gln Gly Gln Glu Ser Asn Lys Asp Arg  
 260 265 270  
 Leu Cys Ile Asp Ile Leu Asp Arg Glu Met Ile Arg Lys Pro Met Ala  
 275 280 285  
 Val Glu Asp Ser Val Thr Ser Pro Leu Leu Ala Asp Asp Leu His Met  
 290 295 300  
 Lys Leu Leu Tyr Leu Glu Asn Arg Val Ala Phe Ala Arg Leu Phe  
 305 310 315 320  
 Pro Ala Glu Ala Lys Val Ala Met Gln Ile Ala Gln Ala Asp Thr Thr  
 325 330 335  
 Pro Glu Phe Gly Ile Val Pro Ala Ala Ser Thr Ser Gly Lys Leu Lys  
 340 345 350  
 Glu Val Asp Leu Asn Glu Thr Pro Val Thr Gln Asn Lys Arg Leu Arg  
 355 360 365  
 Ser Arg Val Asp Ala Leu Met Lys Thr Val Glu Leu Gly Arg Arg Tyr  
 370 375 380  
 Phe Pro Asn Cys Ser Gln Val Leu Asp Lys Phe Leu Glu Asp Asp Leu  
 385 390 405 410 415 420 425 430 435 440 445  
 Pro Asp Ser Pro Asp Ala Leu Asp Leu Gln Asn Gly Thr Ser Asp Glu  
 405 410 415  
 Gln Asn Val Lys Arg Met Arg Phe Cys Glu Leu Lys Glu Asp Val Arg  
 420 425 430 435 440 445  
 Lys Ala Phe Ser Lys Asp Arg Ala Asp Asn Ser Met Phe Ser Ile Leu  
 435 440 445  
 Ser Ser Ser Ser Ser Ser  
 450 455

<210> 13  
 <211> 1052

卷之三

卷之三十一

卷之三

4210 V. 14

42118 195

212. PRT

8213: *Triticum aestivum*

<400 · 14

Glu Gln Gly Gln Glu Ser Asn Lys Asp Arg Met Cys Ile Asp Ile Nle  
 1 15

Glu Arg Glu Met Met Arg Asn Pro Met Thr Ala Glu Asp Ser Val Thr  
 20 25 30

Ser Pro Leu Leu Ala Asp Asp Leu His Met Lys Leu Ser Tyr Leu Glu  
 35 40 45

Asn Arg Val Ala Phe Ala Arg Leu Phe Phe Pro Ala Glu Ala Lys Val  
50 55 60

Ala Met Gln Ile Ala Gln Ala Asp Val Thr Pro Glu Val Gly Gly Phe  
55 60 65 70 75 80 85 90 95 100

Ser Ala Ala Ser Thr Ser Gly Lys Leu Arg Glu Val Asp Leu Asn Glu  
 50 55 60 65 70 75 80 85 90 95

Thr Pro Val Thr Lys Asn Lys Arg Leu Arg Ser Arg Val Asp Ala Leu  
165 170

Ala Lys Thr Val Glu Leu Gly Arg Arg Tyr Phe Pro Asn Cys Ser Gin  
125

Val Leu Asp Lys Phe Leu Glu Asp Gly Leu Pro Asp Gly Leu Asp Ala

130 135 140 145 150 155 160 165 170 175 180 185 190 195 200  
 Pro Glu Glu Gln Ser Glu Thr Pro Asp Glu Gln Gln Val Lys Lys Met

Arg Phe Cys Phe Val Lys Glu Asp Val Asp Lys Ala Tyr Ser Lys Asp

Thr Ala Asp Asn Ser Met Phe Ser Ala Leu Ser Ser Asn Ser Ser Ser

三

<210> 15  
<211> 251  
<211> DNA  
<213> *Oryza sativa*

<210> 16  
 <211> 633  
 <212> PRT  
 <213> *Cryza sativa*  
  
 <400> 16  
 Met Pro Ala Arg Ser Ala Val Val Val Ile Ala Met Glu Pro Ser Ser  
 1  
 Ser Ile Thr Ile Ala Ser Ser Ser Ser Tyr Leu Ser Asn Gly Ser Ser  
 20 25 30  
 Pro Cys Ser Val Ser Leu Ala Pro Pro Gly Ala Gly Ala Val Ala Ala  
 35 40 45  
 Gln Ala Ala Pro Val Ala Ala Gly Glu Gly Gly Gly Gly Gly Gly  
 50 55 60  
 Gly Gly Gly Ser Ser Ser Val Glu Val Val Ser Leu Asn Arg  
 65 70 75 80  
 Leu Ser Ala Asn Leu Glu Arg Ile Leu Leu Asp Ser Asp Leu Asp Cys  
 85 90 95  
 Ser Asp Ala Asp Val Asp Val Ala Asp Gly Gly Pro Pro Val Pro Val  
 100 105 110  
 His Arg Cys Ile Leu Ala Ala Arg Ser Thr Phe Phe Tyr Asn Leu Phe  
 115 120 125  
 Ala Ala Arg Gly Arg Gly Asp Gly Ala Ala Gly Gly Gly Gly  
 130 135 140  
 Gly Gly Gly Gly Gly Glu Arg Thr Gly Gly Arg Pro Arg Tyr Lys  
 145 150 155 160  
 Met Glu Glu Leu Val Pro Gly Gly Arg Val Gly Arg Asp Ala Phe Leu  
 165 170 175  
 Ser Leu Leu Gly Tyr Leu Tyr Thr Gly Lys Leu Arg Pro Ala Pro Asp  
 180 185 190  
 Asp Val Val Ser Cys Ala Asp Pro Met Cys Pro His Asp Ser Cys Pro  
 195 200 205  
 Pro Ala Ile Arg Phe Asn Val Glu Gln Met Tyr Ala Ala Trp Ala Phe  
 210 215 220  
 Lys Ile Thr Glu Leu Ile Ser Leu Phe Gln Arg Arg Leu Leu Asn Phe  
 225 230 235 240  
 Val Asp Lys Thr Leu Val Glu Asp Val Leu Pro Ile Leu Gln Val Ala  
 245 250 255  
 Phe His Ser Glu Leu Thr Pro Val Leu Glu Lys Cys Ile Arg Arg Ile  
 260 265 270

Ala Arg Ser Asn Leu Asp Arg Val Val Ser Ile Asp Lys Glu Leu Pro Pro  
 300  
 Glu Val Ala Val Glu Ile Lys Glu Ile Arg Glu Lys Ser Gin Pro Asn  
 301  
 Glu Glu Asp Thr Val Ile Ser Asp Pro Val His Glu Lys Arg Val Arg  
 302 310 315 320  
 Arg Ile His Arg Ala Leu Asp Ser Asp Asp Val Glu Leu Val Lys Leu  
 325 330 335  
 Leu Leu Asn Glu Ser Glu Ile Thr Leu Asp Asp Ala Asn Ala Leu His  
 340 345 350  
 Tyr Ala Ala Ala Tyr Cys Asp Ser Lys Val Val Ser Glu Leu Leu Asp  
 355 360 365  
 Leu Arg Leu Ala Asn Leu Asn Leu Lys Asn Ser Arg Gly Tyr Thr Ala  
 370 375 380  
 Leu His Leu Ala Ala Met Arg Arg Glu Pro Ala Ile Ile Met Cys Leu  
 385 390 400  
 Leu Asn Lys Gly Ala Ala Val Ser Gin Leu Thr Ala Asp Gly Gin Ser  
 405 410 415  
 Ala Met Ser Ile Cys Arg Arg Leu Thr Arg Met Lys Asp Tyr Asn Thr  
 420 425 430  
 Lys Met Glu Gin Gly Glu Ser Asn Lys Asp Arg Leu Cys Ile Asp  
 435 440 445  
 Ile Leu Asp Arg Glu Met Ile Arg Lys Pro Met Ala Val Glu Asp Ser  
 450 455 460  
 Val Thr Ser Pro Leu Leu Ala Asp Asp Leu His Met Lys Leu Tyr  
 465 470 475 480  
 Leu Glu Asn Arg Val Ala Phe Ala Arg Leu Phe Phe Pro Ala Glu Ala  
 485 490 495  
 Lys Val Ala Met Gin Ile Ala Gin Ala Asp Thr Thr Pro Glu Phe Gly  
 500 505 510  
 Ile Val Pro Ala Ala Ser Thr Ser Gly Lys Leu Lys Glu Val Asp Leu  
 515 520 525  
 Asn Glu Thr Pro Val Thr Gin Asn Lys Arg Leu Arg Ser Arg Val Asp  
 530 535 540  
 Ala Leu Met Lys Thr Val Glu Leu Glu Arg Arg Tyr Phe Pro Asn Cys  
 545 550 555 560  
 Ser Gin Val Leu Asp Lys Phe Leu Glu Asp Asp Leu Pro Asp Ser Pro  
 565 570 575  
 Asp Ala Leu Asp Leu Glu Asn Gly Thr Ser Asp Glu Glu Asn Val Lys  
 580 585 590

Arg Met Arg Ile Cys Glu Ile Lys Glu Asp Val Arg Lys Ala Phe Ser  
 511  
 512  
 Lys Asp Arg Ala Asp Asn Ser Met Phe Ser Ile Leu Ser Ser Ser Ser  
 513  
 514  
 Ser Ser Ser Phe Pro Pro Lys Val Ala Lys Lys  
 623  
 624  
 625

<210> 17  
 <211> 593  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 17  
 Met Asp Thr Thr Ile Asp Gly Phe Ala Asp Ser Tyr Glu Ile Ser Ser  
 1 5 10 15  
 Thr Ser Phe Val Ala Thr Asp Asn Thr Asp Ser Ser Ile Val Tyr Leu  
 20 25 30  
 Ala Ala Glu Gin Val Leu Thr Gly Pro Asp Val Ser Ala Leu Gln Leu  
 35 40 45  
 Leu Ser Asn Ser Phe Glu Ser Val Phe Asp Ser Pro Asp Asp Phe Tyr  
 50 55 60  
 Ser Asp Ala Lys Leu Val Leu Ser Asp Gly Arg Glu Val Ser Phe His  
 65 70 75 80  
 Arg Cys Val Leu Ser Ala Arg Ser Ser Phe Phe Lys Ser Ala Leu Ala  
 85 90 95  
 Ala Ala Lys Lys Glu Lys Asp Ser Asn Asn Thr Ala Ala Val Lys Leu  
 100 105 110  
 Glu Leu Lys Glu Ile Ala Lys Asp Tyr Glu Val Gly Phe Asp Ser Val  
 115 120 125  
 Val Thr Val Leu Ala Tyr Val Tyr Ser Ser Arg Val Arg Pro Pro Pro  
 130 135 140  
 Lys Gly Val Ser Glu Cys Ala Asp Glu Asn Cys Cys His Val Ala Cys  
 145 150 155 160  
 Arg Pro Ala Val Asp Phe Met Leu Glu Val Leu Tyr Leu Ala Phe Ile  
 165 170 175  
 Phe Lys Ile Pro Glu Leu Ile Thr Leu Tyr Gln Arg His Leu Leu Asp  
 180 185 190  
 Val Val Asp Lys Val Val Ile Glu Asp Thr Leu Val Ile Leu Lys Leu  
 195 200 205  
 Ala Asn Ile Cys Gly Lys Ala Cys Met Lys Leu Leu Asp Arg Cys Lys  
 210 215 220  
 Glu Ile Ile Val Lys Ser Asn Val Asp Met Val Ser Leu Glu Lys Ser  
 225 230 235 240

Leu Pro Pro Glu Leu Val Lys Ile Ile Asp Arg Arg Lys Glu Leu  
 240 245 250 255

Gly Leu Glu Val Pro Lys Val Lys His Val Ser Asn Val His Lys  
 260 265

Ala Leu Asp Ser Asp Asp Ile Ile Leu Val Lys Leu Leu Leu Lys Glu  
 270 275 280 285

Asp His Thr Asn Leu Asp Asp Ala Cys Ala Leu His Phe Ala Val Ala  
 290 295 300

Tyr Cys Asn Val Lys Thr Ala Thr Asp Leu Leu Lys Leu Asp Leu Ala  
 300 310 315 320

Asp Val Asn His Arg Asn Pro Arg Gly Tyr Thr Val Leu His Val Ala  
 325 330 335

Ala Met Arg Lys Glu Pro Gln Leu Ile Leu Ser Leu Leu Glu Lys Gly  
 340 345 350

Ala Ser Ala Ser Glu Ala Thr Leu Glu Gly Arg Thr Ala Leu Met Ile  
 355 360 365

Ala Lys Gln Ala Thr Met Ala Val Glu Cys Asn Asn Ile Pro Gln  
 370 375 380

Cys Lys His Ser Leu Lys Gly Arg Leu Cys Val Glu Ile Leu Glu Gln  
 385 390 395 400

Glu Asp Lys Arg Glu Gln Ile Pro Arg Asp Val Pro Pro Ser Phe Ala  
 405 410 415

Val Ala Ala Asp Glu Leu Lys Met Thr Leu Leu Asp Leu Glu Asn Arg  
 420 425 430

Val Ala Leu Ala Cln Arg Leu Phe Pro Thr Glu Ala Gln Ala Ala Met  
 435 440 445

Glu Ile Ala Glu Met Lys Gly Thr Cys Glu Phe Ile Val Thr Ser Leu  
 450 455 460

Glu Pro Asp Arg Leu Thr Gly Thr Lys Arg Thr Ser Phe Gly Val Lys  
 465 470 475 480

Ile Ala Pro Phe Arg Ile Leu Glu Glu His Gln Ser Arg Leu Lys Ala  
 485 490 495

Leu Ser Lys Thr Val Glu Leu Gly Lys Arg Phe Phe Pro Arg Gys Ser  
 500 505 510

Ala Val Leu Asp Gln Ile Met Asn Lys Glu Asp Leu Thr Cln Leu Ala  
 515 520 525

Cys Gly Glu Asp Asp Thr Ala Glu Lys Arg Leu Glu Lys Lys Gln Arg  
 530 535 540

Tyr Met Glu Pro Glu Ala Thr Leu Lys Lys Ala Phe Ser Glu Asp Asn  
 545 550 555 560

Leu Glu Leu Gly Asn Thr Ser Leu Thr Asp Ser Thr Ser Ser Thr Ser  
580 581 582 583 584 585 586 587 588 589 590 591 592 593

Lys Ser Thr Gly Gly Lys Arg Ser Asn Arg Lys Leu Ser His Arg Arg  
580 581 582 583 584 585 586 587 588 589 590 591 592 593

Arg